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ORIGINAL COMMUNICATIONS.

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I.—*Notices of British Fungi.* By Rev. M. J. BERKELEY, M. A.,  
F. L. S. (*Continued from page 42.*)

No. II.

38. *Agaricus hæmatophyllus*, n. s. Berk. Brit. Fung. Fasc. 3, ined.—On peat earth abundantly, in a north border, and amongst rock-work (in company with *Ag. cristatus*;) more sparingly and smaller in a hot-house, where it sometimes sprang from the wall itself, at Milton, Northamptonshire, where it was pointed out to me by Mr J. Henderson, at the beginning of October last. The same gentleman has since found it growing amongst loam in melon pits, and a single specimen has occurred to myself at Lambley Notts on a steep declivity, on loamy clay. The nearest affinity of this curious species, which belongs to the subgenus *Lepiota*, is with *Ag. cristatus* and *Ag. meleagris*, from which it differs essentially in colour, and in its approximate gills.

Solitary, or gregarious; often fasciculate. Pileus 1-1½ inch broad, thin, brittle, chocolate or olive-brown, clothed with minute raised scales, and copious meal of the same colour; flesh pale, not changing when cut. Gills varying greatly in breadth, rounded behind, quite free, but approximate, at first of a fine red like that of the gills of the best mushrooms, at length deep chocolate. Ring broad, fugacious, attached at first in ragged triangular laciniae to the edge of the pileus, mealy externally like the pileus, of a beautiful pink within. Stem 1½ inch high, 1-2 lines or more thick, chocolate

red when rubbed, but clothed with meal, red within, stuffed with white silky filaments, penetrating into the soil by means of a few white branched fibres; smell strong, like that of *Ag. cristatus*. The meal, under a strong magnifier, consists of globular vesicles, which are sometimes shortly pedicellate.

Tab. XV. Fig. 1. *a. a.* *A. hæmatophyllus*\* nat. size; *b. b.* vertical section; *c.* meal highly magnified.

39. *Ag. erubescens*, Fr. Syst. Myc. vol. i. p. 32.—Amongst beech leaves in a wood near King's Cliffe, Oct. 7, 1836. *Ag. carnosus*, Curt. Sow., formerly referred by Fries to this species, is now considered by him *Ag. maculatus*, Alb. and Schw. At the time the English Flora was published I had not met with it, but a single specimen which occurred lately in one of the larch plantations in Sherwood Forest was sufficient to show that it was at least not a true *Limacium*, though I am not satisfied that it is so nearly related to *Ag. fusipes* as Fries (El. i. p. 17,) supposes. The present autumn has also furnished me with a sample of the real *Ag. erubescens*; and though, in some respects, similar to *Ag. carnosus*, it is at once distinguishable by its more robust habit, but especially by its possessing the characters of the subgenus *Limacium*.

Pileus  $2\frac{1}{2}$  inches broad, plano-convex, fleshy, compact, white tinged with rufous, slightly viscid; margin downy involute. Gills rounded behind, adnexed, rather distant. Stem 2-3 inches high,  $\frac{3}{4}$  inch thick, curved at the base, thickest above, stout, firm, fleshy, mottled, within squamuloso-fibrillose; subglanduloso-squamulose within the pileus, which it resembles in colour. Smell scarcely any.

\* 40. *Ag. cossus*, Sow. t. 121.—The difficulties respecting this species are stated in the English Flora. Having lately found *Ag. nitens*, Sow., which is also a true *Limacium*, I am enabled to state positively that it is quite distinct from the present species. Though exactly resembling *Ag. cossus* in outward form, it is quite destitute of its disagreeable smell; and when dried, the white turns to a dark foxy brown, as indeed is represented in Sowerby's plate. It still remains to be proved whether *Ag. eburneus* of continental authors be the same with Sowerby's *Ag. nitens*. I can find no account of such a marked change of colour taking place.

\* 41. *Ag. fusco-purpureus*, Pers. Ic. et Descr. t. 4. f. 1-3.—The

\* The specimens from which the figures were taken were scarcely so dark as the usual state of the species, in consequence of having been slightly touched by frost.

description of this species in the English Flora is by some mischance mixed up with that of *Ag. pelianthinus*. Both will soon be given in the Fasciculi of British Fungi.

42. *Ag. balaninus*, n. s.—On beechmast, Sept. 1836, King's Cliffe, Northamptonshire. An exquisite species, belonging to the section *Calodontes* of the subgenus *Clitocybe*, agreeing in many respects with *Ag. marginellus*, which appears to have been met with by Persoon only, and that perhaps not subsequently to the publication of his Synopsis. That plant is, however, very much smaller, and grows on fir-trees.

Pileus  $1\frac{1}{2}$  inch broad, convex subcampanulate, obtusely umbonate, at length more or less expanded, ochraceous with a slight tinge of amber, very minutely mealy, slightly rugulose carnosomembraneous; margin scarcely striate. Gills broad, rounded, quite free, with the exception of a connecting tooth, rather distant, pale, sprinkled and fringed with dull purple spiculæ; interstices veiny. Sporidia white, elliptic. Stem  $2\frac{1}{2}$  inches high, 1-2 lines thick, attenuated downward, flexuous, rigid, white, and mealy within the pileus, deep Sienna brown below, dark brown at the base, which is imbedded more or less in a spongy mass, by which it adheres to the mast, shining, quite smooth, fistulose.

Tab. XV. Fig. 2. *a.* *Ag. balaninus*, nat. size; *b. b. b.* vertical section; *c.* a section of the extremity of a gill highly magnified to show the spiculæ; *d.* sporidia highly magnified.

\* 43. *Ag. undatus*, Berk. Eng. Fl. Vol. v. pt. 2, p. 51. Brit. Fung. n. 9.—The habitat of this species, as given in the English Flora, is small stumps and sticks. I now find the species very frequently in one locality, and there always upon the subterraneous base of decayed stems of *Pteris aquilina*.

\* 44. *Ag. tuberosus*, Bull. t. 256.—Frequent opportunities of examining this species, under various circumstances, have convinced me that *Acrospermum cornutum* is not an autonomous fungus, contrary to the opinion entertained by me in the English Flora, but a mere disguised form of the plant. When growing on the gills of *Agaricus adustus*, it commences by a little white downy elongated granule, which gradually increases in length and breadth, becoming brown and quite smooth, resembling much the bulb of some species of *Oxalis*, and either gives origin at the apex to a stem and pileus, or suddenly stops in its growth without producing either, and remains dormant through the winter. In the first case, the stem of the Agaric is perfectly continuous with the tuber, as represented correctly, though rudely, by Bolton; occasionally, indeed, the tuber

is so little developed as to be nothing more than a slight incrassation of the base of the stem. In the second case, the perfect fungus is not developed till the ensuing year, when a crop springs up from the tubers, which are in general buried by fallen leaves or moss. The Agaric then springs indifferently from the apex, or any other part of the tuber, and occasionally more than one pileus is produced. It is to be observed that this Agaric often grows upon real Sclerotia, as it does upon other fungi; and the tuberiform state is merely to be regarded as a form arising probably from excess of nourishment. While on this subject it may not be amiss to state that the tubers of *Typhula phacorrhiza* and *gyrans* are true Sclerotia. The former I find on *Sclerotium complanatum* and *scutellatum*, the latter upon *Sclerotium semen*.

\* 45. *Ag. racemosus*, Pers. Disp. Meth. Fung. t. 3. f. 3. Sow. t. 287.—King's Cliffe, Northamptonshire. Respecting this most singular production I have stated in the English Flora, in conformity indeed with a notion expressed by Fries, that I suspect it to be a monstrous state of the foregoing, which has frequently a branched stem. Having lately had the good fortune to meet with a few specimens, I am satisfied that it is distinct, as it turns almost black in drying. My specimens have not the pileus developed, and if it had not been for its being figured in that state, I should without hesitation have considered it a branched *stilbum*, so completely has it the characters of that genus, the little heads being hyaline gelatinous, and consisting of minute elliptic granules.

\* 46. *Ag. vulgaris*, Pers. Tent. Disp. Meth. p. 25. Ic. Pict. t. 19, f. 3. Fr. Syst. Myc. V. i. p. 156.—On fir leaves, Sherwood Forest, October 1836. This species, it should be observed, is included in Loudon's list given in the Hortus Britannicus.

\* 47. *Ag. pterigenus*, Fr. Syst. Myc. V. i. p. 160.—The fungus described under this name in the English Flora is, as stated there, only a variety. The true plant, than which nothing can be more elegant, occurred in tolerable abundance in October last at Lambley, Notts, on dead stems of *Aspidium filix mas*. The colour varies in different individuals from bright orange-red to rose-colour, occasionally the upper part of the stem is brown. The gills are ornamented with a bright orange margin. The pileus in the young plant is oblong, oval, obtuse, minutely furfuraceous at the apex, marked with darker slightly anastomosing veins, which at length, in consequence of the quicker growth of the subjacent stratum, and the collection of the veins themselves into bundles radiating from

the centre, form striæ on the pileus. The stem under a high magnifier is often streaked with veins like the pileus.

\* 48. *Ag. mitis*, Pers. Syn. p. 481.—Abundantly on branches of larch, lying on the ground in Sherwood Forest, October 1836. Upper stratum gelatinous.

49. *Ag. cyphelliformis*, n. s.—On the lower part of a dead plant of *Pentstemon ovatum*. Milton, Northamptonshire, October 1836. Apparently closely allied to no described species. Gregarious. Pileus 2 lines or more broad and high, altogether stemless, cup-shaped, hanging down, cinereous, very minutely strigose, especially at the base; margin paler, sprinkled with a few meal-like scales. Upper stratum gelatinous cinereous, beneath which the flesh is white and very thin. Gills pure white, rather distant, the alternate ones shorter, narrow, linear.

Tab. XV. Fig. 3. *a.* *Ag. cyphelliformis*, nat. size; *b. b.* do. magnified; *c.* a section, also magnified.

\* 49. *Ag. cinnamomeus. d. croceus*, Fr. Syst. Myc. V. i. p. 229.—In a beech wood, King's Cliffe. The figure of Batsch *A. squamulosus*, f. 117, exactly represents my plant, which belongs to a variety apparently not before observed in this country.

50. *Thelephora spadicea*, Fr. El. V. i. p. 176.—On oak stumps, not uncommon in Northamptonshire. Easily known from every state of *Thelephora purpurea* by its becoming blood-stained when scratched. I suspect that Sowerby had this species in his eye when illustrating his *Auricularia tabacina*, if indeed his plant be not altogether identical with it. Sporidia copious, pure white, oblong-elliptic.

\* 51. *Phlebia vaga*, Fr. Syst. Myc. V. i. p. 428. El. i. p. 155.—On a decaying fallen branch, King's Cliffe. It is also noted as British by Loudon. Nothing can be more exact than the description given by Fries in his *Elenchus*.

52. *Clavaria juncea*, Fr. var.  $\beta$  *vivipara*, Fr. Syst. Myc. V. i. p. 479. *A. fistulosa*, Bull. t. 463, H.—Amongst oak leaves, King's Cliffe. My plant is precisely what is figured by Bulliard, but I cannot help suspecting that it is an unusually luxuriant form of *Typhula phacorrhiza*.

53. *Sclerotium truncorum*, Fr. Syst. Myc. V. ii. p. 252.—In various places in Northamptonshire, amongst moss on old stumps, generally forming the matrix of *Ag. tuberosus*.

54. *Spharria cornicola*, Fr. Syst. Myc. p. 530.—On leaves of *Cornus sanguinea*, King's Cliffe.

55. *Asteroma veronica*, Desm. n. 778. cum icone.—On leaves of

*Veronica officinalis*, King's Cliffe. The analysis given by Desmazière exactly accords with my own observations.

57. *Sphæronema blepharistoma*, n. s. Berk. Brit. Fung. Fasc. 3. ined.—On the blackened gills of *Ag. adustus* in very wet weather, King's Cliffe, September 1836. This species is not only in itself extremely well marked, though at first easily regarded as a depauperated state of *Sphæronema subulatum*, but it is especially interesting on account of its peculiar characters, which throw light upon the real structure of that species. Dr Greville remarks, that in *Sph. subulatum*, the perithecium, previous to maturity, contains the sporidia mixed with a gelatinous pulp and a few filaments, which being evacuated along with the sporidia, were very obvious in several specimens he dissected. That the filaments, however, are not discharged with the other contents of the perithecia, I have completely satisfied myself, by induction first, and then by ocular demonstration, but that they originate on the outer surface of their tips, and are in fact the free apices of the flocci, of which the perithecia are composed. This appears very clearly to be the case on comparison with the species represented in the accompanying plate, in which the perithecium is made up of a single circle of filaments, whose bases are soldered together, and whose free apices form a beautifully ciliated orifice; whereas in *Sphæronema subulatum*, there being many circles of filaments, the orifice is furnished with a pencil-like tuft of filaments. In this case, however, if I mistake not, the orifice itself is not ciliated as represented in the figure; at least I have not seen it so. The filamentous structure of the perithecium in *S. blepharistoma* is easily traced almost to the base; in *S. subulatum* the filaments in each circle being more numerous and finer, and the perithecium not made up of a single circle, the substance is much thicker and denser, and its filamentous structure more obscure. Indeed, had it not been for the discovery of the present species, I should have still regarded the filaments as rejected from the perithecium, though with a degree of uncertainty about the matter, such as is intimated in my observation on the species in the English Flora. It is to be observed, that the structure of either is scarcely to be ascertained with accuracy, except from fresh specimens. *S. blepharistoma* at present has occurred only on *Agaricus adustus*; *S. subulatum* is found on various *Agarics* and *Boleti*. A question may be raised whether fungi so constructed belong properly to the division *Pyrenomycetes*; as the texture of the species before us, at least, is not strictly speaking vesiculosulo-floccose. When, however, the uterine character is taken into account, and the visible advance toward the

more normal structure so immediate in *S. subulatum*, I think there can be no reasonable doubt about it. Were, however, the filaments but free to the base in *S. blepharistoma*, and by consequence the mass of sporidia collected in a globule at their centre, we should have a fungus belonging to the Coniomycetes, and indeed only specifically distinct from *Psilonia rosea* and *hyacinthorum*, Berk. Whether the structure in other species of *Sphaeronema* is at all the same, I have no means of ascertaining, as I have never met with any in a recent state.

Perithecia scarcely exceeding half a line in height, often much more minute, transparent, of a very pale yellow, varying greatly in form, but in general more or less inflated at the base, occasionally conico-subulate, often confluent, mostly furnished with a long distinct slender neck, the orifice of which is fringed with a single row of distinct filaments, which are indeed the apices of those of which the perithecium is composed. Sporidia oblong, obtuse or subtruncate, much larger than in *Sp. subulatum*, flowing out and forming about an elongated subpersistent pale-yellow globule.

Tab. XV. Fig. 4. *a.* portion of gill of *Ag. adustus*, with *S. blepharistoma*, nat. size; *b.* do magnified; *c.* single perithecium; *d.* orifice and sporidia; *e.* orifice and sporidia of *S. subulatum*, all highly magnified.

\* 58. *Phacidium coronatum*, Fr. Obs. i. p. 167.—This species has been often figured, but I cannot find anywhere an accurate analysis. The figures of Ditmar and Dr Greville are both defective from two low a magnifier having been used. Dr Greville, indeed, only indicates the presence of paraphyses, and figures a very few minute elliptic sporidia in the asci. In Ditmar's figure the paraphyses are distinctly drawn, and the sporidia are more numerous. The latter even under a low power is the more correct; with a magnifying power a little superior, the sporidia appear to be distributed in short lines, and the paraphyses flexuous; but when highly magnified the granules are found to be sporidiola, arranged six or seven together in linear sporidia, and the paraphyses curled round at the tips, like the apices of the filaments in *Helicosporium*, but not as in that genus septate. It is probable that a still higher power might show septa between the sporidiola. I find the structure precisely the same, whether the plant is produced on beech or oak leaves, and in specimens that have been dried for the herbarium.

Tab. XV. Fig. 5. *a.* asci and paraphyses of *Phacidium coronatum*; *b.* sporidium, both highly magnified.